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Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

July 25, 2003

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JUL 2003
NMED Hazardous Waste Bureau

Mr. Steve Zappe, Project Leader
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505-6303

Re: Transmittal of the Certification Audit Report for the Idaho National Engineering and Environmental Laboratory, Analytical Laboratories Sampling and Analysis Program, Audit A-03-15

Dear Mr. Zappe:

This letter transmits the Certification Audit Report for the Idaho National Engineering and Environmental Laboratory (INEEL) analytical sampling and analysis program developed to comply with the WAP requirements for an independent analytical laboratory. The program was implemented to support the certified characterization programs of other generator sites. The subject audit was conducted at the INEEL near Idaho Falls, Idaho on May 19-22, 2003. This audit report fulfills the requirements of Section II.C.2.c of the WIPP Hazardous Waste Facility Permit. The report contains the results of the certification audit and addresses the services that the INEEL analytical laboratories will perform, including, headspace gas analysis, solids sampling (coring), solids sample analysis, VE of solids, and supplying certified SUMMA® canisters for other generator site use.

I certify under penalty of law that this document and all enclosures were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Should you have any questions concerning this audit report, please contact the CBFO Quality Assurance Manager, Ava L. Holland, at (505) 234-7423.

Sincerely,

Dr. Inés R. Triay FOR
Manager

Enclosure

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cc: w/o enclosure

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U. S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

FINAL AUDIT REPORT

OF THE

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY (INEEL)

IDAHO FALLS, IDAHO

AUDIT NUMBER A-03-15

MAY 19-22, 2003

FINAL AUDIT REPORT OF THE INEEL ANALYTICAL LABORATORIES SAMPLING AND ANALYSIS PROGRAM IN ACCORDANCE WITH THE HAZARDOUS WASTE FACILITY PERMIT

Prepared By: A. Earl Bradford **Date:** 7/21/03
A. Earl Bradford
Audit Team Leader, CTAC

Approved By: Ava L. Holland **Date:** 7/25/03
Ava L. Holland
Quality Assurance Manager

1.0 EXECUTIVE SUMMARY

The Carlsbad Field Office (CBFO) Audit A-03-15 was conducted to evaluate the adequacy, implementation, and effectiveness of the technical and quality assurance (QA) activities related to the Idaho National Engineering and Environmental Laboratory (INEEL) analytical laboratory which functions as an independent sampling and analysis laboratory. The INEEL analytical laboratories will provide sampling and analysis services to the generator sites in accordance with Waste Analysis Plan (WAP) requirements. Audit A-03-15 was the initial certification audit of the INEEL analytical laboratories program.

The INEEL analytical laboratories are managed by the current INEEL Management and Operating (M&O) Contractor (Bechtel BWXT Idaho, LLC). The sampling of the homogeneous solids and Visual Examination (VE) of solids will be conducted at the Argonne National Laboratory – West (ANL-W) facilities at the INEEL. The analytical laboratories will manage the sampling and analysis efforts and the ANL-W activities will be conducted under the analytical laboratories program. The generator sites using the services of the INEEL will retain responsibility for waste certification under their respective certification programs.

The INEEL activities evaluated included: headspace gas analysis, sampling of homogeneous solid waste at ANL-W, analysis of homogeneous solid waste, generation level data verification and validation, SUMMA ® sample canister preparation, and the visual examination (VE) of homogeneous solid waste at ANL-W.

The audit was conducted at the INEEL facilities May 19 through May 22, 2003. The audit team concluded that, overall, the INEEL technical and QA procedures are adequate relative to the flow-down of requirements from the CBFO Quality Assurance Program Document (QAPD); the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (WAP); and the Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC). The audit team also concluded that the defined QA program is satisfactorily implemented in accordance with the CBFO contract and Statement of Work, as well as the INEEL implementing procedures. Additionally, the audit team determined that the INEEL technical areas evaluated were adequate, satisfactorily implemented and effective.

The audit team identified four HWFP related conditions adverse to quality (CAQ) that resulted in the issuance of two CBFO Corrective Action Reports (CARs) requiring corrective actions. The CARs identified unacceptable conditions with the solids analysis processes. The deficiencies identified in the corrective action reports (CAR) discussed below have been corrected. Seven Recommendations were documented and offered for INEEL management consideration. The CARs and Recommendations are described in Sections 6.0 and 7.0 respectively.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of technical and QA processes related to the INEEL analytical laboratories activities associated with headspace gas (HSG) analysis, solids sampling and analysis, SUMMA® canister preparation for use by other generator sites, and the VE of homogeneous solid wastes. The following INEEL program elements were evaluated in accordance with the WIPP HWFP:

Quality:

Nonconformances and Corrective Action
Personnel Qualification and Training
Documents and Records
Sample Control

Technical:

Solids analysis (volatile organic compounds [VOCs], non-halogenated volatile organic compounds [NHVOCs], semi-volatile organic compounds [SVOCs] and Metals)
HSG analysis
Solids Coring
VE of homogeneous solids
Generation-level data verification and validation

The evaluation of INEEL Analytical Laboratories waste analysis activities and documents was based on current revisions of the following documents:

- *Quality Assurance Program Document (QAPD),* DOE-CBFO-94-1012
- *Hazardous Waste Facility Permit Waste Isolation Pilot Plant EPA No. NM4890139088-TSDF,* by the New Mexico Environment Department, dated October 27, 1999, including all applicable modifications
- *Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC),* DOE/WIPP-02-3122
- Related INEEL technical and quality assurance implementing procedures and Argonne National Laboratory – West (ANL-W) technical implementing procedures (see Attachment 4)

2.2 Purpose

Audit A-03-15 was conducted to assess whether the INEEL Analytical Laboratory services related to headspace analysis, sampling and analysis of homogeneous solids, preparation and certification of SUMMA® canisters for use by other generator sites, and the performance of VE of homogeneous solid wastes complied with the WIPP HWFP requirements.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Ava Holland	CBFO QA Manager
Martin Navarrete	CBFO QA Representative
Steve Calvert	CTAC QA Manager
Earl Bradford	Audit Team Leader / CTAC
Jack Walsh	Auditor / CTAC
Annabelle Axinn	Auditor / CTAC
Porf Martinez	Auditor / CTAC
Jim Schuetz	Auditor / CTAC
Amy Arceo	Auditor / CTAC
Priscilla Dugger	Auditor / CTAC
Dorothy Gill	Technical Specialist / CTAC
B J Verret	Technical Specialist / CTAC
Karen Gaydosh	Technical Specialist / CTAC

OBSERVERS

June Dreith	NMED Observer (TechLaw)
Bob Thielke	NMED Observer (TechLaw)
Ben Walker	EEG Observer
Peter Lindahl	LANL Observer
Stewart Podolsky	RFETS Observer

4.0 AUDIT PARTICIPANTS

A pre-audit conference was held in Idaho Falls at the Engineering and Research Office Building (EROB), in conference room 159, on May 19, 2003. During the audit, daily meetings were held at the INEEL Central Facilities Area with INEEL management and staff to discuss issues and potential deficiencies. The audit was concluded with a post-audit conference held in Idaho Falls at the EROB, in conference room 135, on May 22, 2003. INEEL individuals involved in the audit process are identified in Attachment 1.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

The audit team concluded that the INEEL technical and QA procedures adequately reflect the requirements of the CBFO QAPD and the HWFP. They also concluded that the defined QA program is satisfactorily implemented in accordance with the INEEL QA Plan and implementing procedures. The INEEL technical processes evaluated by the audit team are satisfactorily implemented and effective.

5.2 Technical Activities

Each technical area audited is discussed in detail in the following sections. The method used to select objective evidence is discussed, the objective evidence used to assess compliance with the HWFP is briefly cited (and shown in detail on the checklist), and the result of the assessment is provided.

If a question could not be satisfactorily answered, an audit concern was identified. A CAR was prepared to document those items not adequately addressed during the audit. A CAR allows CBFO to track the INEEL's efforts to remediate the deficiency identified in the CAR. Two CARs were issued and are addressed in Section 6.1. Both CARs were satisfactorily closed during subsequent corrective action verification activities.

5.2.1 Table B6-1 WAP Checklist

The B6-1 WAP checklist addresses program requirements from an overall management perspective. It documents the verification that the waste characterization activities and requirements as defined in the WAP are planned and implemented by using controlled procedures. This audit was performed to assess the INEEL analytical laboratories' ability to provide adequate analytical services for user sites, and therefore, ensure that user sites will have credible laboratory analysis results to finalize their TRU waste characterization and certification activities. The INEEL analytical laboratories program will provide headspace gas analysis services, core sampling of organic and inorganic homogeneous solids waste at ANL-W, analysis of organic and inorganic homogeneous solids samples, VE of homogeneous solid wastes at ANL-W, and certified SUMMA® canisters for use by other generator sites. Objective evidence to evaluate the implementation of the associated sampling and analysis, as well as the VE activities was selected and reviewed. Batch data reports, sampling records, and training documentation for INEEL laboratory personnel were included in the evaluation. The audit included direct observation of actual sampling and analysis activities, e.g. gas analysis, solids coring and analysis, and VE of solids. Each characterization or analysis process involves:

- Collecting raw data
- Collecting quality assurance/quality control (QA/QC) samples or information
- Reducing the data to a useable format, including a standard report

- Review of the generated data

The data generated for each characterization/analysis technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures. The material in this section is also addressed in more detail in following sections, which provide the specific procedures audited and the objective evidence reviewed.

During the audit, the INEEL analytical laboratories demonstrated compliance with the HWFP through documentation and by performing the sampling and analysis and VE activities. The INEEL analytical laboratories provided the following:

- Headspace gas analytical batch data reports ECL03002M, ECL03010C and ECL02609G (containing gas analysis information)

- Analytical batch data reports ALD03006S, ALD03007S, ALD03006V, ALD03007V, ALD03008N, ALD03009N, ALD03011N and ALD03012N (containing volatile organic compounds [VOCs], nonhalogenated volatile organic compounds [NHVOCs], semi-volatile organic compounds [SVOCs] and Metals analysis results)

- VE batch data reports WCV-RFD88817 and WCV-RFD76183.

- Solids sampling batch data reports WCS-0301 and WCS-0302

Copies of these batch data reports are included in Attachment 3. The batch data reports reviewed and the sampling processes observed were found to be acceptable.

5.2.2 Table B6-2 Solids and Soils/Gravel Sampling Checklist

This audit was performed to assess the ability of the INEEL analytical laboratories program to ensure the proper management and performance of solids coring at ANL-W and solids sample analysis in accordance with WAP requirements.

The audit team examined the solids sampling capabilities performed at ANL-W. Sampling operations are being performed and documented as required by the WAP. The audit team also evaluated the coring method including: sample collection, sample custody documentation, and sample packaging for shipment to the analytical laboratory. Review of data indicated that the documentation is correct and contains the required information. The overall solids sampling procedures were determined to be adequate. The audit team determined that the solid sampling process is satisfactorily implemented and effective.

The process for sample handling was evaluated at both the sampling facility and the laboratory facility. The evaluation verified that handling of samples was performed in accordance with procedures. The samples are stored correctly after collection and receipt and are correctly tracked as they move through the collection and analysis processes. It was concluded that the sample handling procedures are adequate and satisfactorily implemented and the process is effective. The chain-of-custody initiation process at the

sample facility was examined for samples taken and being sent to the laboratory facility. The overall chain-of-custody program and procedures were determined to be adequate and satisfactorily implemented and the process is effective.

Solid sample preparation and analysis for metals (Mercury and ICP elements), Volatile Organic Compounds (VOC), Non-halogenated Volatile Organic Compounds (NHVOC), and Semi-volatile Organic Compounds (SVOC) were evaluated. The audit consisted of document and record reviews, interviews with analysts and review of selected data packages. Procedures used to control the processes were determined to be adequate in meeting the requirements of the WAP. All laboratory areas inspected were well organized, and the analysts and supervisors knowledgeable with regard to their analytical duties. Batch data reports ALD03006S, ALD03007S, ALD03006V, ALD03007V, ALD03008N, ALD03009N, ALD03011N and ALD03012N (analytical batches) were reviewed to evaluate analysis results against HWFP requirements.

The audit team identified four HWFP related conditions adverse to quality (CAQ) resulting in the issuance of two CBFO CARs. The first CAR (CAR 03-057) was issued as a result of the failure to properly document a situation where a sample storage refrigerator was discovered to be outside the allowed temperature range. The second CAR (CAR 03-058) was issued to identify adequacy and implementation issues with the solids analysis processes in the areas of standards preparation, VOC instrument tuning, and SVOC extract preparation. In addition, seven (7) recommendations for process improvement were offered for consideration by INEEL management (Recommendations 1-7).

The audit team concluded that the solids sampling and analysis processes were adequate, satisfactorily implemented, and effective.

5.2.4 Table B6-4 Headspace Gas Checklist

This audit was performed to assess the ability of the INEEL's analytical laboratories program to provide headspace gas analysis services and provide cleaned and certified SUMMA® canisters for use by other generator sites. Headspace gas analysis operations at the INEEL were observed during actual analysis of samples. The following procedures were evaluated:

ACLP 4.10, *Determination of Method Detection Limits for Gas Analysis*
ACLP-4.25, *Sample Receiving, Custody and Storage*
ACLP 4.30, *Standards Preparation, Documentation and Storage*
ACLP-4.40, *Summa Canister Cleaning*
ACLP 4.45, *Gas Transfer Manifold Systems*
ACMM-9910, *Analysis of Gas Samples for VOCs by GC/FID*
ACMM-9925, *Analysis of Gas Samples for Hydrogen and Methane by Micro GC/TCD*
ACMM-9930, *Analysis of Gas Samples for VOCs by GC/MS*

The audit of the Headspace gas analysis processes included evaluating the analysis equipment, observing analysis activities, and reviewing available headspace gas batch

data reports. Batch data reports ECL03002M, ECL03010C and ECL02609G (analytical batches) were reviewed to evaluate analysis results against HWFP requirements.

Documentation specific to these activities (e.g., calibration records, maintenance logbooks, and instrument logbooks) was reviewed to ensure that laboratory operations met QA requirements as specified in the HWFP. Copies of the applicable documentation reviewed are included in the batch data reports.

The Table B6-4 headspace gas checklist was completed while assessing implementation of the procedures listed above. Laboratory analysis operations were observed and records from generated during performing analysis activities were reviewed.

Generation level data review to ensure analysis results meet program requirements is controlled by MCP-2008, *Analytical Data Recording, Review and Reporting.*

The processes used to clean, leak check, and certify SUMMA® canisters were evaluated and found to adequately meet HWFP requirements. Procedure ACLP-4.40, *Summa Canister Cleaning*, controls canister cleaning and certification.

The audit team concluded that the headspace gas analysis process and SUMMA® canister cleaning and certification processes used by the INEEL analytical laboratories are adequate, satisfactorily implemented and effective per HWFP requirements.

5.2.6 B6-6 VE Checklist

This audit was performed to assess the ability of the INEEL's analytical laboratories program to properly perform and document the VE of homogeneous solid waste. The INEEL laboratories will be performing VE services for other generator sites. VE activities will be recorded on audio/videotape and documented on standard forms.

INEEL VE activities were evaluated by observing actual examinations, reviewing videotapes, and evaluating VE batch data reports WCV-RFD88817 and WCV-RFD76183. These batch data reports are included in Attachment 3.

The VE procedures are HFEF-OI-6890, *TWCP Visual Examination,* and NT-AP-09, *TWCP Visual Examination Expert Functions and Process.* The procedures were found to be adequate in meeting the HWFP requirements.

The training course content for operators and VE experts was reviewed to verify that all HWFP requirements were captured in the course. The course material is included in Attachment 3. No deficiencies were noted in this area.

INEEL is satisfactorily implementing the HWFP VE requirements.

6.0 SUMMARY OF DEFICIENCIES

6.1 Corrective Action Reports

During the audit, the audit team may identify Conditions Adverse to Quality (CAQ) and document such conditions on Corrective Action Reports (CARs).

The following two WAP-related CARs, initiated as a result of Audit A-03-15, have been closed and the adverse conditions identified have been corrected by the INEEL (see Attachment 2).

6.1.1 CBFO CAR 03-057

On May 12, 2003, the temperature of a refrigerator (Cabinet IX) used for storage of WIPP samples was discovered to be at –3 °C, which was out of the acceptable temperature range (4 +/- 2 °C). No objective evidence was recorded to show that the temperature was checked every two hours after it was readjusted and no nonconformance report (NCR) was initiated as required by the procedure.

6.1.2 CBFO CAR 03-058

Adequacy and implementation issues with the solids analysis process:

Procedure ACMM-9260, Rev. 8, did not adequately describe how bromoflourobenzene (BFB) tuning scans are selected. SW-846 requires that this selection process be documented.

Standard 9441ULTRA121002 was made on 12/10/02. The stock standard used (CUS-3478, Lot #R1206) for preparation of this standard had expired on 11/02. Several prepared standards reviewed had been assigned expiration dates beyond those of the stock standards used in their preparation. For example, the matrix spike solution used to spike samples processed in accordance with procedure ACCM-8909 had been assigned an expiration date of 10/30/04 while the stock standard used to prepare the solution had an expiration date of 12/03.

The laboratory was using an unmarked concentrator tube and was filling the tube with 1 ml of liquid as a means to indicate a 1 ml volume. The level was marked on the tube. An extract was then reduced to the marked level within the tube. The laboratory could not demonstrate the accuracy of this method of determining volume.

7.0 SUMMARY OF RECOMMENDATIONS

During the audit, the audit team provides suggestions for improvement of the audited processes to management of the audited organization. The following are the seven HWFP-related recommendations provided to INEEL management for consideration.

Recommendation 1

The quality of ASTM, TYPE II water is verified using an in-line conductivity meter. It was recommended that an independent check be performed periodically to verify that the in-line meter is reading correctly.

Recommendation 2

Acids used for digestion were dispensed from secondary containers. When a "new" lot of acid was started, the remains of the "old" lot was not disposed of. The new lot of acid was added to the remaining old acid. It was recommended that this practice be changed to ensure that old and new lots of acid were not mixed.

Recommendation 3

The block digestor used for mercury digestion had an external temperature controller that was set at 122 degrees. The temperature setting was supposed to ensure that a block temperature of 95 degrees (required) was maintained. It was recommended that a check of the block temperature be performed with every batch.

Recommendation 4

The certifications for some VOC standards (for example EPC00817, Lot # B0020158-2B and STM-260N, Lot # R1560) did not specify the manufacturer's expiration date. The expiration date was documented on either the standard vial box or the label attached to the vial. The box and label were not retained to provide an expiration date for in use standards. It was recommended that the box/label be retained or scanned to provide the information.

Recommendation 5

Procedure ACMM-9441, Section 7.5.2, requires the use of the absolute retention time (RT) of each analyte as the midpoint of the retention time window. The RT that the instrument uses for analyte identification was not changed although the analyst uses this information for data assessment. It was recommended that section 7.5.2 of the procedure be revised to reflect the actual practice.

Recommendation 6

Procedure ACMM-9270, Table 6, identified the acceptance criterion for surrogates as the average % recovery from a minimum of 30 samples of similar matrix, plus or minus 3 standard deviations. The laboratory has not generated sufficient data to calculate the limits. Section 8.2.2.1.2 provides the default surrogate limits used in data assessment. It was recommended that the procedure be revised to eliminate the inconsistency.

Recommendation 7

The concentration of the standard used for the initial MDL determination for NHVOCs was too high to generate a valid MDL. In some cases, the standard was 10-56 times more concentrated than the MDL calculated (recommended to be 3-5 times the estimated MDL). It was recommended that the standard used in the next MDL study be adjusted to a more appropriate concentration.

8.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: Corrective Action Supporting Documentation
Attachment 3: Objective Evidence
Attachment 4: Audited INEEL Documents / Implementing Procedures

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Adams, Bruce	ANL-W / PM		X	
Allred, Jim	Stds & Cal Lab / Lead		X	
Anselmo, Rick	Technical Lead		X	
Bass, Greg	Argonne Area Office / DOE	X		
Black, Dave	INEEL Labs / Tech Spec		X	
Bradford, Rhett	ANL-W / Data Reviewer		X	
Breugh, Dennis	ANL-W HFEF / NFO & WCO		X	
Bronson, Tim	GC Lab Chemist		X	
Brush, Bevin	ANL-W / Data Reviewer & Training Coordinator		X	
Carmichael, Bob	Site Operations / Site Calibration SME		X	
Coburn, Klayne	ANL-W HFEF / Group Leader		X	
Colburn, Julie	ANL-W HFEF / NFO & WCO		X	
Crowder, Catherine	Program Manager/ ECL Tech Lead	X	X	X
DeCoria, Galyn	Organics NHVC / Senior Scientist		X	
Dunhour, Fred	FQAO/ALD	X	X	X
Frye, Jimmy	ANL-W HFEF / NFO & WCO		X	
Gies, Carol	INEEL Labs / Spectrochemist		X	
Hagen, Dan	ANL-W HFEF / Training Supervisor		X	
Hahn, Paula	ALD / FQA Representative		X	
Hand, Rodney	Analytical Labs Manager	X	X	X
Jeter, Jeff	ALD / Tech Lead		X	
Johnson, Sue	Document Control / SOB		X	

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Keller, Steve	ANL-W Env. Programs / Supervisor		X	
Larsen, Janet	Doc Control / Tech lead		X	
Laug, Jeff	ALD / Tech Lead		X	
Lee, Scott	ANL-W / PM	X	X	X
Lundell, Brian	ANL-W HFEF / NFO & WCO		X	
Lundholm, Duane	Spectro Chem / Tech Spec		X	
Magnam, J. M.	ANL-W / Systems Eng VVE / WCO		X	
Marler, Kip	Rad-control / Rad con		X	
Miller, Tim	ANL-W Env Programs / Section Manager		X	
Moffett, Thomas	Organics Semi Vols / Tech.		X	
Morgan, L. A.	ALD / Group Lead		X	
Nielsen, Dennis	ALD / Senior Lab Tech		X	
Porter, Doug	ANL-W / Deputy Director Nuclear Tech. Div.		X	
Pristupa, Scott	Organics NHVOC / Chemist		X	
Riggs, Trent	ALD / QA		X	
Sailer, Shelly	INEEL TWCP / SPQAO	X	X	X
Slade, David	Material Control / Senior Tech. Spec.		X	
Srala, F.	ALD / VOC analyst		X	
Taylor, Vera	ALD / Records Coordinator		X	
Taylor, Rick	ANL-W HFEF / Training		X	
Taylor, Spence	Organics Semi Vols / Tech.		X	
Teckmeyer, Blane	Special Analysis / Analyst A		X	

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Troescher, P. D.	ALD / Group Lead		X	
Walters, Gail	ANL-W / PRA		X	
Wells, Jerry	TRU Waste Program Manager / DOE-ID	X		
Ziemianski, Edward	WMD / DOE-ID			X

1

Audited INEEL Documents / Implementing Procedures

NUMBER	PROCEDURE NUMBER	TITLE
		LABORATORY PROGRAM DOCUMENTS
1		CBFO Statement of Work for the INEEL TRU Waste Characterization Program
2	MCP-2610	QA Program Administrative Controls for the TRU Waste Program
3	MCP-2008	Analytical Data Recording, Review and Reporting
		HSG ANALYSIS PROCEDURES
4	ACMM-9910	Analysis of Gas Samples for VOCs by GC/FID
5	ACMM-9925	Analysis of Gas Samples for Hydrogen and Methane by Micro GC/TCD
6	ACMM-9930	Analysis of Gas Samples for VOCs by GC/MS
7	ACLP-4.10	Determination of Method Detection Limits for Gas Analysis
8	ACLP-4.25	Sample Receipt, Custody, and Storage
9	ACLP-4.40	SUMMA Canister Cleaning
10	ACLP-4.45	Gas Transfer Manifold Systems and Sample Compositing
		SOLIDS SAMPLE ANALYSIS PROCEDURES
11	MCP-2002	Analytical Sample Management
12	ACMM-2810	Determination of Mercury by CVAA for TRU Waste Characterization
13	ACMM-2901	Determination of Metals by ICP-AES for TRU Waste Characterization
14	ACMM-8909	Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
15	ACMM-9080	Determination of Polychlorinated Biphenyls (PCBs) by Gas Chromatography
16	ACMM-9260	Volatile Organic Compounds by Gas Chromatography Mass Spectrometry
17	ACMM-9270	Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
18	ACMM-9441	Determination of Nonhalogenated Volatile Organics by Gas Chromatography
19	ACMM-9500	Sample Preparation for Semivolatile Organic Compounds and Polychlorinated Biphenyls
		ANL-W CORING AND VE PROCEDURES
20	HFEF-OI-6862	TWCP Sample Storage and Shipment
21	HFEF-OI-6890	TWCP Visual Examination
22	HFEF-OI-6910	TWCP Core-Drilling Operation
23	HFEF-OI-6921	TWCP Solid Sample Preparation
24	NT-AP-03	TWCP Data Generation Level Review
25	NT-AP-09	TWCP Visual Exam Expert (VEE) Functions and Process